

## EXHIBIT 3

### Sworn Affidavit of Dr. David Blake, a fellow monkey researcher from Augusta University

---

Explanatory notes about the context, added by Jay Hegdé:

- Dr. Blake is my colleague at the Brain and Behavior Discovery Institute and a fellow monkey researcher whose research is quite similar to mine.
- His statement, organized by topical headings, covers his comments on numerous topics related to monkey research at AU, including what happened to my two monkeys.
- His account fully corroborates the corresponding portions of my account in that, among other things:
  - (i) He heard the veterinary technician, Mr. Cedrick Bouey, confirm that my monkey Ovechkin was indeed given the narcotic Buprenex (i.e., the painkiller/analgesic drug that is believed to have caused the monkeys death) shortly before the animal's death.
  - (ii) His monkeys were taken off protocol for illegitimate reasons, but were put back on protocol.
  - (iii) He was treated differently than me.
- Dr. Blake also sheds light on many other unethical, possibly illegal, occurrences related to monkey welfare and regulatory infrastructure at AU.
- This cover page -- and only the cover page -- of this exhibit is prepared by the me. The remainder of this exhibit were provided by the Affiant, Dr. Blake.

## **AFFIDAVIT OF DR. DAVID BLAKE**

Comes now DAVID BLAKE, who, after being duly sworn, did depose as follows:

1.

My name is Dr. David Blake. I am over eighteen years of age and I have read this affidavit completely, and, based on my own personal knowledge do testify as set forth below. I do so of my own free will and without any hindrance of making this statement.

### **My background, training, and research**

2.

I am a tenured Associate Professor in the Brain and Behavior Discovery Institute (hereinafter “BBDI”), with a clinical appointment at the Department of Neurology, of the Medical College of Georgia (“MCG”) of Augusta University (“AU”). I obtained my doctoral degree from Johns Hopkins University School of Medicine in Baltimore, MD. My dissertation research involved understanding brain function using monkeys, including rhesus macaque monkeys, as a part of which I was trained in all aspects of monkey welfare, including surgical procedures, and feeding. I have more than two decades of subsequent experience in this field, and have published articles in peer-reviewed, national and international scholarly journals including *Science*, *Nature*, *Neuron*, *The Journal of Neuroscience*, *PNAS*, and others. My research has been previously supported, and is currently supported, by the National Institutes of Health (“NIH”). I have been continuously employed at MCG and AU for about ten years now and carry out animal research using both monkeys and rodents. I have served as a member of the Institutional Animal Care and Use Committee (“IACUC”) from 2008 to 2013, during which time I was the only member on the IACUC with direct experience in monkey research, and one of only two members with direct experience in large animal research.

### **My laboratory at AU**

3.

At AU, I carry out all procedures involving monkeys, including surgeries, on AU's Gracewood Campus, located a few miles from the Augusta Airport. All my other research is carried out on the Health Sciences campus. I closely interact with the veterinary staff and researchers, especially animal researchers, on both campuses almost daily basis. In my current research, I use juvenile, growing monkeys. This is a significant difference from the research of Dr. Jay Hegde ("Jay"), which uses fully grown, adult monkeys.

### **Aftermath of Ovechkin's death**

4.

After the death of Ovechkin, a rhesus macaque monkey in Jay's research program, I was curious. In part, because I had served on the IACUC for five years, and I realized that the reasons behind an unexpected animal death needed to be determined, and in part because I had upcoming macaque recovery surgeries, so any potential problems needed to be flushed out. So, I sought to determine what had happened. Based on current recollection, my first inquiries were to Jay and Mr. Matthew Maestri ("Matthew", Jay's Research Assistant at the time), who both explained that the animal had died after regaining reflexia, *i.e.*, after showing reflexes that are indicative of consciousness. This piqued my interest, because in my 27 years of performing large animal recovery surgeries, an animal death after regaining reflexia had only happened one other time, and that time had a clear explanation. Jay and Matthew also told me that Mr. Cedrick Bouey ("Cedrick"; a Veterinary Technician) had performed the tech work during that procedure.

## **Cedrick Bouey's account of Ovechkin's death**

5.

So next I went to Cedrick. I asked Cedrick what had happened. He mentioned that the animal had vomited multiple times in recovery, which sometimes happens with gas anesthesia. I became suspicious that the animal had choked on its vomit. Then Cedrick described what happened. After the regaining of reflexia and vomiting, the animal suddenly just sort of stopped breathing. I asked him if the vets had just administered buprenorphine (a narcotic painkiller, also known as Buprenex). He said the buprenorphine was administered shortly before the respiratory arrest.

6.

Around 1996 or 1997 as a post-doctoral scholar at the University of California, San Francisco ("UCSF"), I accidentally killed a marmoset (a smaller species of primate) by administering the proper dose of buprenorphine after the monkey had regained reflexia. The monkey had been on barbiturates, and the interaction is known but not well appreciated. At the time, I sought to determine what happened. I reported the incident to the IACUC. I worked with the vets to amend our protocol to divide the first buprenorphine dose in half – half given on regaining reflexia, the other half an hour later. We had no further problems. The incident was reported to the U.S. Department of Agriculture ("USDA"), which regulates animal welfare.

7.

In any case, Cedrick's description of the respiratory arrest matched so precisely with my own recollection of my own case that it prompted me to ask him about the buprenorphine – he did not offer that information *a priori*. The key points were the timing of the respiratory arrest, and the respiratory arrest after regaining reflexia. As I mentioned, large animal respiratory arrest after regaining reflexia is extremely rare, and can be caused by buprenorphine shortly after a shot

is given. There is no known interaction with Isoflurane, but the doses of buprenorphine are extremely small, and miscalculation (0.1 mg/kg instead of 0.01) would lead to this outcome. We remind ourselves every time to double-check the dose to avoid this error.

8.

After my discussion with Cedrick, I went to my office and grabbed my copy of the book “Anesthesia and Analgesia in Laboratory Animals”. I opened it to the section describing how to handle a monkey vomiting after a procedure. I gave the book to Cedrick, open to that section, and told him that he could read that one page when he got a chance, so he would know precisely what he should do if an animal vomited again. Cedrick told me that he would not be giving further accounts of what had happened in the surgical procedure, because he felt it would have a negative effect on his job performance. I told him I understood. The veterinarians at the time had a sort of intimidating and chilling effect on their staff.

9.

I later followed up with Dr. Victor Monterroso (“Victor”), the chief veterinarian and the Director of the Laboratory Animal Services (“LAS”) at the time, about the vomiting and buprenorphine. The buprenorphine, which had been described to me by Jay, Matthew, and Cedrick, was not in the timeline in the surgical log. Victor had examined the animal in necropsy and determined it did not have a blockage in its respiratory tracts, which ruled out a vomit/choke to death explanation.

#### **About the surgical log and necropsy report**

10.

My examination of the surgical log found the vets had logged the Dopram and other drugs to try to revive respiration in the timeline. The buprenorphine administration was not

logged in the timeline, but was instead added in drug administration at the top. I have not worked with this specific surgical team, but on all others with which I have worked, that would not occur. The analgesic would be logged in the timeline, which makes it easier to reconstruct what occurred in surgery. As a further point of interest, the animal use protocol (“AUP”) certainly requires buprenorphine to be given around the time reflexia is regained. The surgical log indicates 5 minutes elapsed between palpebral reflex (animal waking up) and respiratory arrest. In my other procedures at this institution, the analgesic would be given in those five minutes. Really, once the reflexes are noted, the analgesic is given because you may lose venous access shortly thereafter. You wait to give them until reflexia is noted because the stimulation of the animal (by pain) will reduce the time until reflexia is noted.

As further notes on the surgical log, the animal’s temperature was not logged for more than five hours, and was aberrantly warm (so warm you would need to interrupt a surgery to cool the animal off) at the end of the procedure. That, in itself, is a clear indicator of the competence of the anesthesia monitoring that day. If that had occurred in one of my procedures, I would schedule a meeting with the veterinary staff to set procedures in place so that it would not occur again.

**About the removal of Jay’s second monkey, “Crosby” (24Q) from the protocol**

11.

I was unaware of the specifics of why 24Q was taken off protocol, and I did not contribute to the development of the underlying policy. Rather, I am just now reviewing the communications between you and the LAS Head and the IACUC Chair and Vice President of Research.

12.

Weight targeting for monkeys, *i.e.*, setting a specific weight target for a given individual monkey, is not supportable as appropriate practice in any way, shape, or form. It is true that body condition scores (“BCS”) and weight charts are used as two out of many indicators of animal health. However, it is also true that monkeys, like people, come in different shapes and sizes. So, removing an animal from study to make it match a weight or body condition score of optimal for its sex and age is unsupportable. One can draw comparable human analogies. My son is at the 5-10th percentile of weight for his age. Can you imagine his doctor taking him out of school, and not allowing him to return until he fattened up? Some animals are naturally healthy and viable at a body condition score of 2. Good veterinarians know this, and know that BCS is only to be used as one of multiple factors in determining an animal’s health. The initial emails from Victor (the vet), indicate that weight targeting was the only factor in removing your animal from study. That would constitute poor practice.

13.

It was in the aftermath of Ovechkin’s death that the body condition scoring began to be discussed. My impression is that the IACUC Chair at the time, Dr. David Stepp, and vets suggested that the low bodyweight of Ovechkin may have led him to be frail with respect to anesthesia, and that higher body weights were desirable.

14.

In an email on February 27, 2014, the IACUC chair, Dr. Stepp, informed both Jay and I that weight targeting was being considered. This email, along with my entire email response to the IACUC chair, have been appended herewith as **EXHIBIT A**. It should be noted that, in the five prior years (ending June 30 2013), I served on the IACUC, and was specifically their source of expertise on monkeys and USDA-covered species, *i.e.*, animal species whose welfare is regulated by USDA.

15.

The IACUC Chair emailed me to call his cell. He suggested on the phone that I lead the other NHP investigators in a response to the weight targeting issue, and provide an alternative to the IACUC. Through multiple emails with fellow monkey researchers Dr. Alvin Terry, Dr. He Cui, Jay and myself, this emerged as our statement (appended herewith as **EXHIBIT B**).

**Circumstances under which my monkeys were taken off protocol, and subsequently put back on.**

16.

Over the next few months, Victor began to push and push his weight targeting on me. By July, I was absolutely certain my animals would be removed from study. I wrote an email to Drs. David Stepp, Michael Brands, Mark Hamrick, and Joe Tsien on July 3rd, 2014 (attached herewith as **EXHIBIT C**). This email was written specifically to clarify for the IACUC that there is no reason, under normal IACUC function, why the food motivation used in my studies should be an animal welfare concern. The restriction was scientifically necessary, at most a very minor issue of suffering, and posed no health risks to the animals. Huge studies are published on caloric restriction in macaques at levels comparable to my studies without significant negative health consequences. My laboratory was in extremely good shape compared to other monkey labs around the nation, of which I have personal direct, first-hand knowledge.

17.

All 4 of my monkeys were removed from study on a Friday afternoon in late July 2014 which effectively halted productivity in a sector of my that including two full-time personnel (one a PhD). My records indicate the July 25, 2014 as the date. It was the day after the IACUC meeting that month, and at a time when the IACUC Chair was out of the country and in Greece.

If the clinical vet determines an animal is not healthy enough for study, the IACUC may override him, with caution. However, it would take a full meeting of the IACUC to do that, and those happen once per month. In my five years on the IACUC, we never had an emergency meeting. So, the choice of July 25th occurred specifically to ensure my animals would be off study for at least one month.

### **Visit by an External Veterinarian**

18.

Before the next IACUC meeting, Dr. Fawn Connor-Stroud, a veterinarian from the Yerkes National Primate Center in Atlanta, visited. I do not know what communications, if any, she had with our IACUC prior or after her visit. However, in person with me, she voiced 100% support for my use of food restriction with minor modifications that I had already proposed. She viewed my monkeys in their cages, but did not physically examine my monkeys nor had them taken out of their cages, and said they looked healthy and great.

19.

At the next monthly meeting of the IACUC meeting, held on August 27, 2014, the IACUC came up with a new food regulation policy. Specifically, animals that were growing needed to have a BCS of 2.5 to be on study, and restriction could occur down to 75% of ad libitum consumption levels. I had already provided the IACUC with published peer review literature demonstrating that it is scientifically necessary to restrict to 70% (*i.e.*, not 75%), and that normal, healthy, unrestricted adolescent monkeys often have a BCS of 2.0. This phenomenon occurs in other contexts, too. Kids have growth spurts, and they appear skinny during the spurts. We've all seen it happen with humans, and it is documented in monkeys. Nonetheless, the adolescents were held to a higher BCS standard than adults.

20.

One day later, I asked the vet to return my animals to study under the new guidelines at the suggestion of the IACUC Chair. The vet returned them to my protocol (which allows us to weigh them and interact with them, but not to conduct food restriction work) but did not approve them for study pending further evaluation of their health.

21.

I also emailed the IACUC Chair. I had submitted an amendment to return my animals to study, which would have overridden the veterinary judgment by the vote of an informed IACUC. I had communicated with other IACUC members about the discussion of my amendment, and had found that my amendment had not been communicated to the IACUC. Instead, it was intercepted by the chair, never considered for vote, and the chair pushed his own policy. It is absolutely unethical not to allow investigators to submit their own proposal to the IACUC for discussions and/or voting. I would never have tolerated such behavior (or done it myself) in my five years on the IACUC. The email I sent to the IACUC chair on August 29, 2014, cc'ed to all IACUC members (appended herewith as **EXHIBIT D**) indicates these points. I was so chagrined that the IACUC chair had not allowed me to communicate with the IACUC membership at large that I began to send emails not just to him, but to everyone on the committee so there would be no lapse of communication. The August 29th email was sent in response to the communication I received from IACUC after its August meeting about the IACUC new policy on NHP (*i.e.*, non-human primate) food regulation.

22.

One very clear thing happened as a result of this email: David Stepp changed IACUC policy so that I could no longer determine if he had, or had not, communicated my amendment to the committee accurately. The IACUC instituted a non-disclosure agreement ("NDA") on all

their discussions. The next month, when I went to talk to IACUC members about what had been discussed, they informed me they were gagged and could not discuss it. And the story was pretty much the same. The vet made invalid excuse after invalid excuse. The IACUC refused to overrule the vet. And my animals were not back on study after the September meeting. I was certain the amendment I had proposed that month (which included a new food policy and an override on the vets removing my animals from study) had not been communicated to the IACUC.

23.

Soon thereafter, I scheduled a meeting with Dr. Michael Diamond (“Mike”, who had recently taken over from Dr. Hamrick as Senior Vice President of Research). I explained that I was certain that if my amendment were sent to the committee for a yes-or-no vote, it would be approved, and that the chair was specifically obstructing my ability to communicate with the committee. I literally yelled and screamed at Mike; feel free to ask him. My work had been suspended for 3 months for no reason, and specific roadblocks were constructed just to prevent my animals from being returned to study. Mike figuratively collared David Stepp (according to Dr. Stepp), who came to my office the day after my meeting with Dr. Diamond. Dr. Stepp conducted an emergency IACUC meeting via email vote, and my animals were returned to study within 48 hours of my meeting with Dr. Diamond.

#### **I was allowed to modify my protocol**

24.

The end result was the use of intramural guidelines from NIH, which are not actually a policy, but give me broad leeway to restrict animals to up to 30% of ad libitum values on weekdays, provided they are around 70% on weekend, and are offered a chance to work until

they are no longer hungry on weekdays.

### **My observations about IACUC's NDA**

25.

I made short mention of the IACUC NDA above. Make no mistake about it. This NDA was created because of my actions. Dr. Stepp could not tolerate an investigator being able to determine whether the IACUC was conducting its business properly. The NDA specifically removed any transparency from the process. By controlling communications with the IACUC, the Chair was able to enact virtually any policy he liked without the knowledge of the committee. In my opinion, the NDA is not within reasonable bounds of behavior for faculty at our University. This specific action – the creation of an NDA to prevent a Principal Investigator from being able to communicate with the IACUC about his policies except through the IACUC chair is a specific, obstructionist move. In addition, I think the legality of the NDA needs to be examined by someone familiar with the law in this area. By my reading, it is blatantly illegal according to the Georgia Open Meetings Act.

26.

I would also like to thank the Grievance Committee for their time. My impression, as all this was occurring, was that the back-and-forth and time sink for the IACUC was substantial and caused them to increasingly withdraw from their responsibilities, which left much more in the hands of the chair. The same was certainly true of the VP of Research Mark Hamrick who would refuse to meet people to discuss these issues. In the end, I don't have a problem with a vet removing my animals from study and considering whether they are healthy enough. It happens all the time. Typically, we communicate, evaluate our efforts, reach a consensus, and move forward. In this case, the vet would not listen to reason, would not consult with existing literature

on animal welfare, and neither would the IACUC. The IACUC miserably failed in its mission to regulate animal welfare. Even after all major animal welfare points had been made clear, they still failed. In my opinion, had I been able to communicate directly with the committee, my animals would only have been off study for one month, not three. I do not blame the committee members, but the communication they received from the chair. The actions taken by the Chair, starting with the August IACUC meeting when my amendment was not communicated accurately, and culminating in creating an NDA to remove transparency, were not in keeping with the values of the faculty.

#### **My message to the Grievance Hearing Panel**

27.

With respect to the Grievance at issue, I think the committee may take the following points. The policies instituted on myself and Jay in February-September 2014 were not in keeping with appropriate animal welfare concerns. Even after communicating this point, with citations from the literature, outside consultations, all of which 100% backed the notion that weight targeting was not appropriate and that animals should be returned to study, animals were not returned to study. They were intentionally kept off study for some reason about which I can only speculate. It was clear to me that the LAS Veterinarian and the IACUC Chair acted in ways in my case (which is not the Grievance being heard) that were outside the bounds of acceptable professional behavior and thus constitute Grievable actions. These actions, at a minimum, cost me two months of laboratory productivity. I have not pursued a Grievance, mainly through my own cost/benefit analysis. This crap takes time, and my time is better spent on my studies. However, the notion that people acted inappropriately in ways that damaged faculty members – absolutely, 100%, I have no doubts that this occurred in my case, and given the extreme analogy

between the removal of my animals from study, and the removal of 24Q from study, it seems likely to me that this happened in Jay's case as well.

28.

This is the best of my recollection and I make these statements on February 29, 2016, and am aware that I am testifying under oath.

Affiant further sayeth not.

David Blake

DAVID BLAKE

Sworn Before Me this 29<sup>th</sup> day of February, 2016

Heide M. Andrews

Notary Public, Richmond County, Georgia



Heide M. Andrews  
Notary Public  
Columbia County  
State of Georgia  
My commission expires 2/6/2018

## **EXHIBIT A**

From: David Stepp

Guys,

Today the IACUC at its first extended discussion around the surgical loss of an NHP last month. I have also consulted with Axel Wolff at OLAW and an external examiner reviewed the surgical log, the necropsy report and the IACUC protocol. The synthesis of all this was that this is not a reportable incident to OLAW as it occurred within protocol and there was no evidence of negligence in any of the documentation reviewed. This has been deemed an unexpected but not preventable adverse event that occurred while in the usual course of study and no further action will be taken in terms of compliance reporting.

That said, the discover process uncovered what we believe are opportunities for improvement in the studies covered under these types of protocols. While a final policy has not been set, the current biases are:

- 1 – Sufficient surgical preparedness will be set at 48 hours. Any outstanding issues such as personnel not physically on site, reagents not yet arrived, equipment not guaranteed to be available will cancel the surgery. Surgical preparation will not begin until the team is assembled on campus.
- 2 – Body conditions scores will need be raised into the 3 to 3.5 range at the discretion of LAS veterinarians. To prevent compounded weight loss, body weights will be expected to return to the level of the first run of study before the second can begin.
- 3 – Additional reporting to the IACUC will be expected for all NHP deaths, including scheduled euthanasia. This record keeping will insure that the IACUC as well as LAS has an up-to-date understanding of in-flow and out-flow of all NHPs on campus.

LAS is also adopting some new measures they will be putting in place to manage NHP procedures on their end. As you know, the successful rebuff of the HSUS allegations has increased their interest in FOIAing our operation. Your cooperation is most appreciated.

D.

David W. Stepp, Ph.D.  
Professor, Vascular Biology Center & Department of Physiology  
Basic Science Director, Diabetes and Obesity Discovery Institute  
Medical College of Georgia  
Georgia Health Sciences University  
1120 15<sup>th</sup> St., CB-3212A  
Augusta GA 30912  
[706-721-1949](tel:706-721-1949)  
FAX [706-721-9799](tel:706-721-9799)  
<http://www.georgiahealth.edu/centers/vbc/stepp.html>

---

MIME-Version: 1.0

Received: by 10.217.42.197 with HTTP; Fri, 28 Feb 2014 08:10:31 -0800 (PST)

In-Reply-To: <CALk6WC3XiDCMzM-4h-

MVQSZwnDOLJd+bj8=WAGqe\_jLmaz4WwQ@mail.gmail.com>

References: <E898501D62FC354A943BEA5BE7831AC9546921@EX-MLB-03.ad.georgiahealth.edu>

<CALk6WC3XiDCMzM-4h-

MVQSZwnDOLJd+bj8=WAGqe\_jLmaz4WwQ@mail.gmail.com>

Date: Fri, 28 Feb 2014 11:10:31 -0500

Delivered-To: dblake.mcg@gmail.com

Message-ID:

<CALk6WC0tDrsKYZTpOEw07vM2Zm8dAAd4yFOacyTXGPACdQH21A@mail.gmail.com>

Subject: Re: IACUC NHP discussion

From: Dave Blake <dblake.mcg@gmail.com>

To: David Stepp <DSTEPP@gru.edu>

Content-Type: multipart/alternative; boundary=001a1132fb1651c48804f379adb8

--001a1132fb1651c48804f379adb8

Content-Type: text/plain; charset=ISO-8859-1

David,

to expound.

The requirement to maintain a body condition score of 3+ is insane. Recently, when I purchased animals, the vendors Alphagenesis and Primate Products (who serve the southeast) could not provide me with a single animal at a body condition score of 3. So, it would appear that vendors do not agree that animals need to be at a body condition score of 3 to be usable in research. They were mostly offering animals with a body condition of 2 or 2.5.

My colleague at Wake Forest has all his animals at a body condition score of 2. He would be unable to do research if he were required to maintain his animals at a body condition score of 3. I would similarly be unable. Food or water restriction typically results in animals at body condition scores of 2 or 2.5.

This year the vets have already taken the unprecedented step of increasing the biscuit count of my monkey (body condition score 2) when it was working, we were collecting data, and the animal was gaining weight from month to month. The animal promptly gained weight and refused to work. Even though the gained weight has been re-lost, the monkey has still not resumed

training, and I have lost 2 potential months of data.

There have been similar problems in the Terry lab with disturbing research in animals that had stable weights and were working when their daily feeding schedule was altered.

The veterinarians need to provide a compelling reason, based on animal suffering or well being, as to why the need to maintain an animal at a body condition score of 3 is so great that it overweighs the scientific necessity in NIH funded work of using food or water restriction. To most people in the field, and their vets, body conditions do not become troubling until an animal is less than 2, and I agree with that assessment.

It would be preferable to have regular contact with the vets, in some form of 1 of them being at Gracewood for at least a half day a week. They could see the animals, and the detailed record keeping that we engage in to maintain animals in operant behavior, and work with us, instead of demanding we adhere to standards that are absolutely impossible in a caged environment with animals food motivated.

-Dave

## **EXHIBIT B**

The relationship between weight, weight trends, body condition, food consumption, the animal's laboratory performance, and appetite in macaque monkeys is complex. In the case of any animal in which feeding changes are considered, all available factors must be assessed before making a feeding recommendation. A specific animal's historic (recent) food consumption, appetite, and pattern of weight change must be prioritized in making a decision about changes in animal feeding over any normative data for a monkey of the same sex, weight, and age. It shall be expected that animals under 8 years of age gain weight from year to year, and that animals over 8 years of age are reasonably stable in weight i.e., not decreasing. It is generally desirable to have animals with body condition scores (BCS) from 2 to 3.5. However, it is generally recognized that BCS is a subjective measure, and is not by itself a completely reliable measure of the animal's health. Furthermore, each animal is different, and indications of consistent appetite, a high level of activity, and stable weight may indicate a robust animal even with a body condition score of 2. Therefore, it is advisable to consider an animals' body condition score together with other metrics of its health.

Nonetheless, body condition scores below 2 require regular veterinary monitoring, and will be required to be reported to the veterinary staff. Losses of more than 10% of an animals weight, perhaps referenced to an AUP defined baseline weight, should be reported to the veterinary staff.

Notes: Food consumption is an estimate of how many biscuits an animal averages per day over a week or longer period of time. Appetite may be indicated if an animal fails to eat all biscuits offered it. Patterns of weight change should be evaluated on weekly or monthly estimates, and use of shorter time frames of data should be performed cautiously.

## EXHIBIT C

David, and Michael, I am CC'ing Hamrick and Tsien on the remainder of all conversations about this issue.

To bring you up to speed, I am being accused of calorically restricting my animals so that they are chronically hungry, and thus pose an animal welfare issue that could present some trouble to the institution at some point in the future (or just not be good animal welfare practice which should be disallowed by the IACUC).

First Major Point. Victor and I disagree on the caloric content of the food.

-----

Victor and I spoke this week. He has been assuming the biscuits our monkeys eat are 23 calories per biscuit. Misty Fritz-Williams had written up feeding charts for the same biscuits stating they were 40 calories per biscuit. I had my tech pull up the manufacturers specifications on the biscuits, and actually weigh biscuits on a scale. He found, as Misty did, that the biscuits are 40 calories each. Victor said he would go back and check.

Using 40 calories per biscuit, we calculated the weekly average caloric consumption. Our 4 animals eat 56.0, 59.8, 66, and 77 kcal/kg/day under this regimen. The National Research Council range is 70-115 for ad libitum fed animals in this age/weight range. My lab, since this witch hunt began, has been tracking all food consumption from our animals 7 days per week so that we would have the data to defend ourselves, because it was clear from the outset that we were assumed guilty.

Second Major point. Scientific Necessity

-----

It is scientifically necessary for my work to calorically restrict animals to somewhere between 70 and 85% of the NRC range (the ad lib range). This means that an animal with a weak appetite would likely be restricted to about 50 kcal/kg/day, which is close to the low end of our range. Animals not so restricted do not perform higher cognitive behaviors with the same accuracy and consistency, even when working for preferred treats. See the first attached manuscript.

Third Major Point. Is there an animal welfare issue for the animals?

---

It is not harmful to the health or psychological well-being of the animals to restrict them to this level. See the second attached manuscript. There are literally dozens of other papers on calorically restricting macaques of all ages and the positive health effects that ensue. There is an ongoing veterinary debate about using weight stable feeding regimens in adults (below ad lib) as being a beneficial husbandry practice.

It has been argued by the IACUC that hunger is an animal welfare issue. Of course, it has not been quantified, and is not clearly related to distress. And, limited restriction of calories has an obvious animal welfare benefit in improved health. While I was on the IACUC, I had come to the conclusion that pain and distress had to be evaluated by the standard veterinary signs of pain and distress specific to that species. It states as much in the Guide. Food restriction, as is published, does not meet that criteria.

More data will be forthcoming

---

I will be sending weight charts from the past 6 weeks. You will see nearly flat weights, or modest upward trends, in each animal. No one is starving to death. The published work on caloric restriction demonstrates that animals gain less weight, and mature more slowly, under such a program. If you want to double check the weights, they are on clipboards on the housing room for the monkeys in OB117 as dictated in my AUP.

Animal weight trends since arrival at GRU

---

Some of the animals are at the weights at which they entered the facility six months ago. However, all four animals lost substantial amounts of weight, without any food restriction, while they were in quarantine (nearly 10% each). Presumably the change in housing had an effect to change their appetites. Victor and Moralejo requested that we not restrict the animals, because they wanted to fatten them back up to the weights at which they entered the facilities. The animals were fed ad lib for more than the next month, but did not gain any weight. In other words, all of them were below the weights at which they entered the facility at 3 months without any caloric restriction. It is typical for animals to adjust to new housing environments with new

feeding schedules. It says as much, directly, in the veterinary guides on providing adequate feed for primates.

I made a significant concessionary offer to Victor that was refused

-----

I did request of Victor that we be allowed to keep the caloric restriction of our animals constant daily, but at the same restriction levels they are now. They would have the same caloric intake each day of the week. Each few weeks we could test them at higher intake to see if cognition suffers. If not, they could keep the higher food intake. He refused to agree before he could double check the caloric content of each biscuit, but he overall was reasonably agreeable if I was right (that puzzled me - why should one be contingent on the other?). According to my AUP, the veterinary staff sets weekend weight values. If we both agreed, we could implement this immediately. As it stands now, the husbandry feeds them as much as they will eat for 2 days on the weekend. Then, we restrict them pretty hard for 1-2 days to get them back to work, and food consumption is pretty stable the rest of the week. It would be preferable to keep the intake stable daily, and at the same caloric content as now. I agree, Michael and Ruth made this point in the IACUC meeting. I think it would be better, and as such I am compelled to try to change my practice. But I will need to either submit an amendment or get Victor to agree.

Is this an issue for the USDA, AALAC, or animal rights?

-----

There is no basis to think my weight-stable food reinforcement animals are going to be any sort of lightning rod for AALAC or the USDA. They are particularly concerned about water restriction in macaques, and about veterinary care contingent on intracranial implant failures.

Either of you, or someone from the IACUC, SHOULD GO TO GRACEWOOD AND WATCH WHAT IS GOING ON AND MAKE POLITE INQUIRIES FROM MY LAB STAFF AND THE GRACEWOOD STAFF. In my mind the reinforcement strategies we use should be held up as examples to the primate labs around the nation of how this sort of work should be done to minimize animal welfare issues while accomplishing science, and I have worked very hard in the last decade specifically to make progress on that front. Water restriction is horrible in comparison, and people use it because they don't know better, and are scared of change, and because it requires more effort from the lab.

Dr. Stepp can tell you, if the U Penn IACUC chair filled him in, that almost everyone at Penn still uses water restriction (all but one lab). My sources at U Pittsburgh told me the same thing about their primate use (but is scared their IACUC would crack down on his lab similarly to the way the GRU IACUC is cracking down on mine). My contact there was the only person using food restriction, and he, like I, is really scratching his head about why the IACUC cannot see the animal welfare issues clearly. We both moved to food restriction SPECIFICALLY to improve animal welfare. It also improves the science - it is a win-win.

-Dave

CC: Mark Hamrick, Joe Tsien

## **EXHIBIT D**

David,

it is unclear why I am required to amend my protocol to include your new policy. I have an approved AUP, and if my animals are healthy enough to return to study they should be returned to study ASAP. The IACUC has not issued any finding against my program with respect to animal welfare or noncompliance with my protocol. That notwithstanding, I am receptive to the LAS director's concerns and do wish to achieve a new policy that will both meet the scientifically necessary requirements of my studies and meet the standards of animal welfare.

We had a consulting veterinarian from Yerkes last week. I was first-hand present when she stated that she felt it would be necessary to level out the feeding over the course of the week, something I suggested to you and Victor more than two months ago. She also stated that my monkeys "looked great" and that even with the body condition scores noted by our veterinarians, such studies would have continued, uninterrupted, at Yerkes. She further stated that periodic vacations are counter productive, because they inevitably lead to several weeks of no productivity while the animal loses the weight that it just gained, before it is adequately motivated to work. Such vacations are not present in the AUPs at Yerkes. As such, she clearly made a statement that the policies just passed by the IACUC are substantially more stringent than those at Yerkes.

I also must correct you. When you need to take 4 weeks off every six months, it is not six months uninterrupted. It is five months followed by a month off, and a 16% reduction in productivity over the course of the year. Such a reduction in productivity must be carefully considered, especially when a consultant from the largest primate center in the USA just informed us that such a break in productivity is counterproductive. Do we really want to establish GRU as a more restrictive center in which to perform research than any other center in the USA? And one in which the breaks in productivity do not even serve the animals?

The policy I submitted to you, which was not communicated to the IACUC, nonetheless contained a 2 week vacation each six months, and also took into account all the criticism from the IACUC and the Yerkes consultant. As has been clearly demonstrated in my animals, the catchup period is entirely in the first week. In the last three and a half weeks of the five week suspension my animals have not gained weight. Such periods do not benefit the animals or the research. They are just wastes of time and money. For that reason I have reduced the "time off" from four weeks each six months to two weeks. Similarly, I added protection for the animals about allowable body condition scores before being evaluated by veterinarians, frequency and methodology for recording baseline weights, and tailoring the baseline consumption for each

animal. If you read my response you will see each point is justified in scientific necessity or animal welfare.

In the five and a half years I was on the IACUC, it was never the case that policies were initiated by the IACUC. They were initiated by the investigators, informed by feedback from the IACUC, and resubmitted by the investigators. It also became very clear to me that my arguments on scientific necessity, of my program, and pain and distress literature associated with my program, that were communicated to you, in detail, in the last month, were not

further communicated to the IACUC or used to inform the new policy. As these are scientific findings published in peer review journals, the lack of their consideration is inappropriate.

My request is to communicate a policy suggestion DIRECTLY to the IACUC members, and that such a policy will include arguments on scientific necessity and no-unnecessary pain and suffering as dictated by our mandate to follow animal welfare guidelines. I have attached my suggested food restriction guidelines for macaques. I have also attached a note detailing the issues that require these guidelines to be different from the guidelines passed at the last IACUC meeting. The main issue here is communication. I request feedback from all members of the IACUC on this policy. Feedback between the investigator and the IACUC is an integral part of the process. And each IACUC member should be aware that my suggestions both improve protection for the animals as well as meet the standards of scientific necessity. The details on the suggested "vacation" length are substantially informed by the weight and appetite changes of my animals over the last five weeks.

We do not need to speculate on how long a vacation is appropriate. If a vacation is mandated, the animals will rapidly gain weight in no more than the first 11 days. I have sent each IACUC member this data.

To the IACUC members: email me your critiques or comments. I would love to communicate directly with you, only for the purpose of achieving appropriate animal welfare regulation in these studies. I fully recognize that you get to decide what is appropriate, but you have always in the past accepted and considered feedback from the investigators, and I humbly request the same in this case.

With feedback, I will submit a new, feedback informed, policy to the IACUC for consideration.

Again, I fully recognize that this is taking an enormous amount of the IACUC members' valuable time, but policies that neither serve the animals nor the investigator in important ways need to be amended. And, I thank you for your attention.

-Dave